

# **2006 National Geospatial-Intelligence Agency Historically Black Colleges & Universities and Minority Institutions (HBCU-MI) Research Initiatives Broad Agency Announcement (BAA) HM1582-06-BAA-0005**

---

## **OVERVIEW INFORMATION**

**Federal Agency Name:** Department of Defense, National Geospatial-Intelligence Agency (NGA), InnoVision Directorate, Office of Basic and Applied Research

**Funding Opportunity Title:** 2006 NGA HBCU-MI Research Initiatives

**Announcement Type:** Initial Announcement

**Funding Opportunity Number:** NGA BAA Number HM1582-06-BAA-0005

**Catalog of Federal Domestic Assistance (CFDA) Number:** None

**Dates:** Proposal Due Date is 5 May 2006

**Concise Description:** This Broad Agency Announcement by the National Geospatial-Intelligence Agency announces a Fiscal Year 2006 competition for the NGA Historically Black Colleges & Universities and Minority Institutions (HBCU-MI) Research Initiatives. The focus for the FY06 HBCU-MI solicitation includes four specific topics supporting Automated Geospatial-Intelligence Analysis (AGA) and its constituent technologies. This involves research to help improve analyst abilities as well as providing better automated capabilities in the analyst environment. The HBCU-MI program awards multi-year grants to address these needs.

**Anticipated Amount/Number of Awards:** Through this competition, NGA expects to make eight to ten awards in several specific research topics as described herein. The level of the grant awards is about \$140,000 for a two-year grant.

**Who is Eligible to Apply:** A U.S. domestic college, university or other degree-granting institution providing post-secondary school courses of study that is classified as an Historically Black College or University, or a Minority Institution will be the primary awardee for purposes of award execution. In this context, "Minority Institutions" includes Tribal Colleges (TC), Hispanic Serving Institutions (HSI) and other qualifying minority institutions. This institution must employ the Principal Investigator. All U.S. domestic college, university or other degree-granting institution providing post-secondary school courses of study are eligible to apply for research grants under the parallel NGA University Research Initiatives (NURI) BAA #HM1582-06-BAA-0004.

## Table of Contents

<b>I.</b>	<b>FUNDING OPPORTUNITY DESCRIPTION.....</b>	<b>3</b>
A.	INTRODUCTION .....	3
B.	SPECIFIC RESEARCH TOPICS FOR THE FY2006 HBCU-MI PROGRAM.....	3
1.	<i>Topic Area 1: Advanced Mathematical Sensor/Data Exploitation Capabilities and Applications .....</i>	<i>4</i>
2.	<i>Topic Area 2: Selection, Assignment, and Training of Imagery Analysts .....</i>	<i>5</i>
3.	<i>Topic Area 3: Geodesy and Geophysics .....</i>	<i>6</i>
4.	<i>Topic Area 4: New Techniques for Discovery and Analysis.....</i>	<i>7</i>
<b>II.</b>	<b>AWARD INFORMATION .....</b>	<b>8</b>
<b>III.</b>	<b>ELIGIBILITY INFORMATION .....</b>	<b>8</b>
A.	ELIGIBLE APPLICANTS .....	8
B.	COST SHARING OR MATCHING.....	9
C.	OTHER .....	9
<b>IV.</b>	<b>APPLICATION AND SUBMISSION INFORMATION .....</b>	<b>9</b>
A.	ADDRESS TO REQUEST APPLICATION PACKAGE.....	9
B.	CONTENT AND FORM OF APPLICATION SUBMISSION .....	9
1.	<i>Cover Page.....</i>	<i>10</i>
2.	<i>Executive Summary.....</i>	<i>10</i>
3.	<i>Project Description.....</i>	<i>10</i>
4.	<i>Personnel Resumes .....</i>	<i>11</i>
5.	<i>Cost .....</i>	<i>11</i>
6.	<i>Certifications.....</i>	<i>12</i>
C.	FUNDING RESTRICTIONS .....	13
<b>V.</b>	<b>APPLICATION REVIEW INFORMATION .....</b>	<b>13</b>
A.	CRITERIA .....	13
1.	<i>Primary Evaluation Criteria.....</i>	<i>13</i>
2.	<i>Other Evaluation Criteria.....</i>	<i>13</i>
B.	REVIEW AND SELECTION PROCESS .....	14
C.	ANTICIPATED ANNOUNCEMENT AND AWARD DATES .....	15
<b>VI.</b>	<b>AWARD ADMINISTRATION INFORMATION.....</b>	<b>15</b>
A.	AWARD NOTICES .....	15
B.	ADMINISTRATION AND NATIONAL POLICY REQUIREMENTS.....	15
C.	REPORTING .....	15
<b>VII.</b>	<b>AGENCY CONTACTS.....</b>	<b>16</b>
A.	GRANTS AND CONTRACTING POINT OF CONTACT .....	16
B.	ADMINISTRATIVE ISSUES POINT OF CONTACT .....	16

## I. FUNDING OPPORTUNITY DESCRIPTION

### A. Introduction

This Broad Agency Announcement (BAA) by the National Geospatial-Intelligence Agency (NGA) announces a Fiscal Year 2006 competition for the NGA Historically Black Colleges & Universities and Minority Institutions (HBCU-MI) Research Initiatives. In this context, “Minority Institutions” includes Tribal Colleges (TC), Hispanic Serving Institutions (HSI) and other qualifying minority institutions. HBCU-MI is an NGA initiative to enhance the capabilities of U.S. universities to perform research and related education in science and engineering areas critical to NGA’s mission and to national defense. The HBCU-MI Program is a component of the NGA Academic Research Program (NARP). General information about NGA can be found at: [www.nga.mil](http://www.nga.mil). Specific information about the NGA Academic Research Program can be found at: [www.nga.mil/narp](http://www.nga.mil/narp). Additional information that describes, in detail, the scope of geospatial intelligence can be found in the Geospatial Intelligence (GeoINT) Basic Doctrine, Publication 1 at: [http://www.nga.mil/NGASiteContent/StaticFiles/OCR/geo\\_pub1.pdf](http://www.nga.mil/NGASiteContent/StaticFiles/OCR/geo_pub1.pdf).

NGA has interest in supporting research teams whose efforts intersect more than one traditional science and engineering discipline. Such multidisciplinary team efforts can accelerate research progress in areas particularly suited to this approach and also can help to hasten the transition of research findings to practical application. By supporting team efforts, HBCU-MI complements other DoD programs that support university research principally through single-investigator awards.

The U.S. National Science Foundation (NSF), U.S. Geologic Survey (USGS) and Department of Homeland Security (DHS) share many of the fundamental research goals detailed in this announcement that have scientific merit beyond the specific objectives of the Department of Defense. Relevant NSF, USGS and DHS Program Officers expect to participate in the review, selection and support of some projects submitted in response to the HBCU-MI BAA.

In the following paragraphs, this BAA describes research topic areas comprising NGA’s most important enabling technologies. These descriptions provide offerors with a frame of reference for NGA research interests. NGA encourages innovative ideas that address these interests. Offerors are urged to consider the research issues posed and, as appropriate, to contact NGA research topic points of contact to discuss potential efforts. Inquiries are welcome. Note, however, that while technical contacts are listed for a topic, proposals must be submitted to the specific addressees shown in Section IV C.

### B. Specific Research Topics for the FY2006 HBCU-MI Program

The focus for the FY06 HBCU-MI solicitation includes four specific topics supporting *Automated Geospatial-Intelligence Analysis* (AGA) and its constituent technologies. This involves both research to help improve analyst abilities, as well as providing better automated capabilities in the analyst environment. One of the major hard problems facing NGA and the geospatial-intelligence community is challenge of converting the vast quantities of geospatial, geophysics and geodetic data acquired by advanced sensor systems into useful and actionable information and intelligence. At the same time that the volume of raw data is expanding by

orders of magnitude, the capacity of traditional human analysis and data extraction, while improving through the use of better tools, remains relatively constant. Therefore, it is critical that robust semi- and fully-automated approaches to Geospatial-Intelligence Analysis be developed.

The sub-topics described in the following sections describe in detail the research requirements that will support the overall objective. While the intent of this solicitation is to select proposals that support all of the sub-topics described below, awards in any sub-topic area will be made only if sufficiently meritorious proposals are received. NGA reserves the right to allocate available funds among the sub-topics based on the quality of the responses and NGA priorities. An individual sub-topic area may have no awards, a single award or multiple awards.

## **1. Topic Area 1: Advanced Mathematical Sensor/Data Exploitation Capabilities and Applications**

POC: Dr. Edward Bosch, (703) 735-3859, [Edward.H.Bosch@nga.mil](mailto:Edward.H.Bosch@nga.mil)

Recent mathematical and physical theoretical discoveries are producing significant developments and capabilities in the design of sensors, and the collection and exploitation of the data produced by these. NGA would like to support the investigation and the development of promising technologies, based on mathematical, physical and spectroscopic theory, that will significantly improve and further advance the state-of-the-art in Remote Sensing, Geospatial Intelligence Analytics and Advanced Geoprocessing with new techniques that can efficiently address several critical issues. For example, the amount of data collected (imagery, text, voice, video, etc.) by current capabilities is too voluminous to process for the amount of available analysts. Increasing the number of analysts is not the solution since there will always be more data to process. On the other hand, increasing the sophistication of the exploitation algorithms has its challenges and can be costly given the minimal gain in accuracy. Therefore, new paradigms that efficiently process and analyze relevant information must be developed.

The analyst's experience is an invaluable resource that is very difficult to model. It is not clear which thought processes will prompt an analyst to draw conclusions about a region of interest. Therefore, it is reasonable to develop capabilities that can sift through large and disparate databases, extract and sort the relevant information according to its significance and draw the attention of the analyst to this set of documents or image regions. As a consequence, the time spent analyzing any given set of documents/images will be significantly reduced thus allowing the analyst to examine only relevant information.

Included below are various capabilities that can lead to improved exploitation methods:

- Geometric-based image segmentation
- Orientation-based texture segmentation applied to hyperspectral images for target/object discrimination

- Linear and nonlinear dimension reduction/mappings of high dimensional data for segmentation, registration
- Exploitation of information in non-PCA compressed space
- Dimensionality-revealing methods, manifold learning, multiscale harmonic analysis
- Optimum arrangement/distribution of sensor platforms for maximum sensing coverage and information-extraction capacity
- Acquisition, reconstruction and exploitation of imagery from incomplete data
- 3D image modeling
- Exploiting seemingly structure-less, large and disparate datasets. What are the significant components?
- Non-derivative-based edge detection mappings for image registration
- Building functions on complex data for linear segmentation and noise separation from information
- HSI Linear and non-linear spectral mixture techniques
- New Energy-based learning models and multiple alternative outputs for HSI exploitation
- New data representations models that will increase the accuracy of the exploitation algorithms

## **2. Topic Area 2: Selection, Assignment, and Training of Imagery Analysts**

POC: Dr. Jeffrey Kretsch, (703) 735-3159, [Jeffrey.L.Kretsch@nga.mil](mailto:Jeffrey.L.Kretsch@nga.mil)

The recruitment and training of analysts at NGA is central to our ability to maintain a world class organization. The process entails long periods of training and great expense of clearing an individual. Means are needed to increase the retention rate, reduce the training time needed to reach proficiency, and to improve the abilities of the analysis. This topic area seeks basic research to address some of the fundamental questions that may help NGA better address these needs. What are the special skills and abilities crucial to success as an analyst? How should the most promising candidates be selected from the available pool of applicants? How should these analysts be assigned to the component best matched to their skill set and work preferences? What training techniques are the most effective and efficient for training prospective analysts? Are there required skills for which known training techniques are ineffective, thereby constraining the number of available candidates to those who naturally possess those skills? This would inform NGA on what balance to place between selection in recruitment efforts and training of the workforce after

recruitment.

This topic area will take two approaches to this. In the first, advances in cognitive task analysis and testing have led to commercial tools to aid in the selection and placement of employees. Work is needed to determine which tests are best at predicting performance of individuals doing analysis work for the purpose of improving hiring and placement decisions over current interview-based practices, as well as improving training. Of particular interest is the exploration of measuring and training informal reasoning, which goes beyond the well-defined normative principles used in formal reasoning. Informal reasoning better reflects the mental approach used by experts, but has received little attention due to experimental control and measurement difficulties (see Canadian Journal of Experimental Psychology, 2004, 58:2).

The second approach will examine the potential and limitations of novel methods for training the most promising analyst candidates. A better understanding of the neuroanatomical and neurophysiological basis of the perceptual and cognitive processes critical to intelligence and geospatial analysis, coupled with insight into the capacity for enhancing these processes via deployable training methods, could lead to better and faster training techniques. It could also provide the means to evaluate the efficacy of proposed training techniques, particularly under relevant environmental conditions involving fatigue and stress. Consequently, this approach will combine behavioral testing with the use of advanced techniques from cognitive neuroscience, such as encephalography and functional brain imaging, to gain an understanding of the neural correlates of the performance enhancement sought through training.

Note that human subject testing performed under this topic must conform to NGA Policy Notice PN 3612.1 “Use of Human Subjects in Research” as well as all other Federal requirements for the protection of human subjects.

### **3. Topic Area 3: Geodesy and Geophysics**

POC: Mr. Stephen Malys, (703) 735-3133, [Stephen.Malys@nga.mil](mailto:Stephen.Malys@nga.mil)

The NGA mission includes development of a coherent set of geophysical models including a detailed representation of the Earth’s gravitational and magnetic fields. While significant advancements have occurred in the last decade, measurement and representation of the high frequency (short wavelength) components and the gradients of these fields require further research. Characterizing spatial and temporal variations in the physical properties of materials in the shallow subsurface (the first 100 meters) is of particular interest. NGA is interested in research resulting in techniques to fuse geophysical and geospatial measurements from a variety of existing and experimental sensor types and extract subsurface structural and compositional information. Any geophysical sensors that can potentially help characterize spatial variations in the Earth’s shallow subsurface are of interest. Improving our understanding of the phenomenology of spatial variations in the natural gravitational or magnetic properties in this near-surface zone is of high interest.

Algorithms and techniques to visualize and interpret modeled or measured potential field (gravitational and magnetic) magnitudes, vectors, and gradients are also of interest. These geophysical algorithms and techniques must accurately and effectively combine disparate data sets collected at various spatial and temporal resolutions, with different types of instruments, and with different levels of precision and accuracy.

Successful proposals should address one or more of the above applications. Emphasis should be on novel approaches. Extending or modifying existing algorithms which result in significantly improved speed and reliability of the algorithm will be considered, but given less weight. In addition, the proposal should:

- demonstrate knowledge of current research and the relevant state-of-the-art in the application subject area;
- provide a succinct summary of the proposed research; and,
- describe how the proposed research will improve the state-of-the-art of geodesy and geophysics relevant to this NGA application.

#### **4. Topic Area 4: New Techniques for Discovery and Analysis**

POC: Mr. Edward Laikin, (703) 735-33501, [Edward.C.Laikin@nga.mil](mailto:Edward.C.Laikin@nga.mil)

NGA is beginning to research new techniques for intelligence analysis and reporting, with an initial emphasis on imagery analysis. We want to shift from a paradigm where analysts look at imagery and other sources and then produce narrative text reports (often with embedded graphics) to a paradigm where the analysts tag the data with relevant features, events, and conjectures in a form computers can understand and reason with. “Reports” will now be grounded with facts, judgments, and conjectures that are classified according to a complex web of connected ontologies and concepts. This web of entities and events, which have had their meaning or semantics made explicit, would then become another source of information that can be mined for intelligence.

In anticipation of having this web of information in which entities and relationships are classified with multiple ontologies, NGA is seeking novel mathematical approaches to mine this rich, multidimensional data for patterns, clusters, and relationships. We are not seeking, and do not intend to fund, research on the application of traditional data and graph mining algorithms to this data. Rather we are seeking research proposals to explore and develop techniques that draw from areas of mathematics such as topology and algebraic geometry that have not been adequately represented in the information mining research communities.

NGA does not expect to provide data for this research. Therefore proposals must discuss the sources and types of data the researchers will use and why this data would be a suitable surrogate for the types of ontologically classified instance data that NGA may produce in the future. Key characteristics will be that the data that is classified

according to multiple ontologies and that it is discrete, noisy, ambiguous, and possibly incorrectly classified.

## **II. AWARD INFORMATION**

Through this HBCU-MI competition, NGA expects to make awards in several specific research topics as described in Section I. B. The number of grants awarded is subject to the availability of funds, but it is anticipated that as many as three awards will be made this year. All awards will be based on merit competition. Depending on the quantity and quality of proposals received, NGA may elect not make any award(s) under individual research topics. Each grant is awarded for a base period (typically two years) with a one-year option (primarily intended for transitioning research to practical application). The level of the HBCU-MI grant awards is, on average, about \$70,000 per year/per grant. Therefore, the base period proposal should be for two years of effort and a total of about \$140,000.

This HBCU-MI competition is specifically for the research topics described in Section I. B. Offerors are advised to read this announcement carefully. It explains NGA's research needs upon which the topics are based, and the terms and conditions of this competition.

## **III. ELIGIBILITY INFORMATION**

### **A. Eligible Applicants**

A U.S. domestic college, university or other degree-granting institution providing post-secondary school courses of study that is classified as an Historically Black College or University, or a Minority Institution will be the primary awardee for purposes of award execution. In this context, "Minority Institutions" includes Tribal Colleges (TC), Hispanic Serving Institutions (HSI) and other qualifying minority institutions. This institution must employ the Principal Investigator.

NGA encourages and accepts proposals from consortia of universities or departments, because research in multidisciplinary topics may require forming teams with strengths in multiple science and engineering fields. Offerors who propose a teaming arrangement must name one Principal Investigator (PI) as the responsible technical point-of-contact. If two or more institutions collaborate on a proposal, the proposal must describe, in both the proposal text and the budget, the relationship among the institutions and their respective roles, as well as the apportionment of funds among institutions.

NGA expects that HBCU-MI projects will promote application of research, primarily for defense purposes but also for commercial purposes. Therefore, one factor that will be used for evaluating proposals is the quality of planned interactions with research and development organizations that transition research findings to applications -- industrial organizations, DoD laboratories or other organizations that perform research and development for defense applications. Examples of interactions are collaboration in the performance of the proposed research, exchange of scientific and engineering personnel, and exchanges of technical information. Each proposed interaction will be evaluated in the context of the entire proposal. Evaluation will include an assessment of the likelihood that the proposed interaction positively impacts research outcomes and transition to application.



To facilitate these interactions, offerors can propose sub-awards to industrial organizations. However, consistent with the principal goals of a university-based research initiative, at least two-thirds of the award funds are to remain vested with the PI's institution.

### **B. Cost Sharing or Matching**

There is no required cost sharing or matching, but cost sharing by industrial and university participants is encouraged.

### **C. Other**

NGA intends to acquire unlimited rights to the technical data resulting from research work specified as an element of performance under the resulting grants.

## **IV. APPLICATION AND SUBMISSION INFORMATION**

The Government will evaluate all selectable proposals submitted under the terms and conditions of this BAA. Government-paid consultants or subject matter experts may be involved in the evaluation and selection processes.

NGA intends to award all available FY06 funds. To be considered and evaluated, the full proposal must be received by the Government by the due time and date as identified under Submission Dates and Times. Proposals received after the closing date will be treated according to Federal Acquisition Regulation part 15.208.

The Government will evaluate all proposals submitted under the terms and conditions of this BAA. Proposals will be evaluated against criteria in Section V. A. The estimated grant start date identified in Section V. C. should be used for budget and proposal purposes. Offerors may, however, request a later start date and could therefore develop a budget in accordance with the proposed start date.

This funding opportunity is not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs."

### **A. Address to Request Application Package**

This announcement contains all necessary information to apply. No application kit is required.

### **B. Content and Form of Application Submission**

NGA is concerned with research in specific areas of science and engineering, with science and engineering education, and with the availability of equipment required to meet its research objectives. For this reason, all proposals must adequately describe the technical objectives and approaches, support of students, and expenditures for equipment, all of which will be evaluated by qualified reviewers per Section V. Proposals must be complete and self-contained to qualify for review. Separate attachments, such as institutional brochures or reprints that are not germane to the proposal, are discouraged. Proposals shall be prepared single-spaced in 12-point Times New Roman font, with at least one-inch margins on top, bottom and sides, on 8½" by 11" pages. Proposals shall be

formatted ONLY as searchable (not scanned) .pdf files and must be less than 3MB in file size. The Government's mail servers will not accept files of a greater size. The proposal shall include all of the following items:

## **1. Cover Page**

The cover page shall include the BAA number HM1582-06-BAA-0005, proposal title, and NGA topic or research area of interest as described in Section I. B. A single proposal may span several topic areas; please ensure the topics are clearly identified. The cover page must also indicate the name, phone number, fax number, postal address, and e-mail address of both the Principal Investigator and an appropriate official in the university's administration. In addition, please provide a Data Universal Numbering System (DUNS) and Tax Identification (TIN) number.

## **2. Executive Summary**

Provide a project summary no longer than one page. This shall summarize the significant and important characteristics, approaches and benefits to NGA of the proposed research, abstracted from the Project Description.

## **3. Project Description**

The project description portion of the proposal shall be limited to ten (10) pages (not including references) and should:

- a. Describe in detail the research to be undertaken. State the objectives and approach and the relationship to state-of-knowledge in the field and to similar work in progress. Include appropriate literature citations and prior work. Discuss the nature of expected results.
- b. Describe the facilities available for accomplishing the research objectives. Describe any equipment proposed for acquisition under this program and its application to the research objectives. Government Furnished Information (GFI) may be provided upon request. Describe plans for the research training of students in science and/or engineering.
- c. Describe in detail proposed sub-awards or relevant collaborations (planned or in place) with industry, government organizations, or other appropriate institutions. Particularly describe how collaborations are expected to facilitate the transition of research results to application. If sub-awards are proposed, make clear the division of research activities and provide detailed budgets for the proposed sub-awards. If industrial collaborations are proposed, describe how the proposed research will impact the industrial partner's research and/or product development activities.
- d. Identify other parties to whom the proposal has been/will be sent.

#### **4. Personnel Resumes**

Resumes shall be limited to two (2) pages per person and shall describe the qualifications of the Principal Investigator and other key researchers involved in the project. Include curriculum vita. For teaming or collaborations, one individual must be the designated Principal Investigator for purposes of technical responsibility and contact.

#### **5. Cost**

Beginning on a new page, the financial portion of the proposal should contain cost estimates in sufficient detail for meaningful evaluation, including cost details for proposed sub-awards. For proposal purposes, use the later of the estimated award start date per Section V. C. or the proposed start date. The cost proposal must include the total cost of the project, as well as a breakdown of the amount(s) by source(s) of funding (e.g., funds requested from NGA, non-federal funds and/or institutional funds to be provided as cost sharing, etc.). The costs should be broken down for each year of the program and shown by three distinct totals: a total for the basic three-year grant period and a total for each of two optional follow-on years. Costs of entertainment, amusement, diversion and social activities and any costs directly associated with such activities are unallowable. There is no page limit for the cost section of the proposal. This section shall include statements as to the basis of estimate for all proposed costs. Cost elements should include, but are not limited to:

- a. Time being charged to the project: for whom (principal investigator, colleagues, graduate students, etc.), and the commensurate salaries and benefits. Allowable charges for graduate students include salary, appropriate research costs, and tuition. Allowable charges for undergraduate students include salary and research training costs, but not tuition.
- b. Fringe benefits.
- c. Costs of equipment: based on recent quotations and broken down in sufficient detail for evaluation (equipment costs should be budgeted primarily during the first year). Allowable equipment will ordinarily be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose equipment, such as a personal computer, is not eligible for support unless primarily or exclusively used in the actual conduct of the proposed scientific research.
- d. Travel costs and time, and the relevance to stated objectives. This shall include a breakdown of the number of travelers, location, and duration; and estimated costs for transportation, rental car and per-diem. This shall also include travel for the required attendance at the annual NARP Symposium after the award of the grant and at the end of each subsequent year of the grant (i.e., four trips for the basic three-year grant award). The symposium is held in the Washington, D.C. area.
- e. Other direct costs: materials and supplies; publication, documentation and

dissemination; consultant services; computer services; communication costs not included in overhead; other (identify).

- f. Sub-award costs and type (the portion of work to be sub-awarded and rationale); note that the sub-award of funds among all university and industry performers responding as one consortium must be described carefully in both the text and the cost section. Also, while collaborations with industry are encouraged, award funds must be vested substantially (at least half) with the academic institution(s).
- g. Indirect costs.

## **6. Certifications**

By signing and submitting any proposal under this BAA, the offeror is providing the:

- a. Certification at Appendix A to 32 CFR Part 25 regarding debarment, suspension, and other responsibility matters;
- b. Certification at Appendix C to 32 CFR Part 25 regarding drug-free workplace requirements; and
- c. Certification at Appendix A to 32 CFR Part 28 regarding lobbying.

These certifications are located in Parts 25 and 28 of the DoD Grant and Agreement Regulation (DoDGARs), DOD 3210.6-R. This document is available electronically, under the heading "publications", at the following Internet site:

<http://www.dtic.mil/whs/directives>.

The person who is authorized to provide these certifications should sign proposals.

## **Submission Dates and Times**

To be considered and evaluated, the Government must receive the full proposal by 5:00 PM (EST) on 5 May 2006. Submission time will be determined by the date/time stamp of the transmitting email message adjusted to Eastern Standard Time. If a proposal is submitted in an untimely manner (after 5:00 PM, EST on 5 May 2006) the criteria in Federal Acquisition Regulation part 15.208 will apply.

NGA will send an acknowledgment of receipt of the proposal to the originator of the e-mail that submitted the proposal. After evaluation by the Evaluation Team, NGA will notify originators whether or not a proposal is being recommended for an award. Acknowledgment and notification will be sent via e-mail according to the schedule in Section V. C. , with a copy to the appropriate university administrative office.

The proposal shall reference BAA Number HM1582-06-BAA-0005. Proposals shall be submitted by e-mail electronically to [narp@nga.mil](mailto:narp@nga.mil). In the event of system problems when submitting a proposal, contact one of the Points of Contact listed in paragraph VII.

## **C. Funding Restrictions**

The proposed annual cost must be approximately \$70,000 for a total of approximately \$140,000 for the two-year base period of the grant. Some annual variation is allowed as long as the total for the base period remains approximately \$140,000. Unless specifically authorized by the Grants Officer, the Grants will not provide for reimbursement of pre-award costs.

HBCU-MI grants are funded incrementally with annual funding provided after the annual DoD budget is approved. The government anticipates that incremental funding will be provided for the full grant award, when it becomes available. Thus, all HBCU-MI grant awards are subject to the availability of funding.

## **V. APPLICATION REVIEW INFORMATION**

### **A. Criteria**

Proposals in each of the research areas will be evaluated in accordance with the following criteria. The percentage in parentheses indicates the relative importance of each criterion.

The primary evaluation criteria are:

#### **1. Primary Evaluation Criteria**

- a. Relevance and potential contributions of the research to the NGA science and technology needs as described in this BAA (25%)—note that this is a key criteria and proposals that are not relevant to the stated needs, no matter how technically meritorious, will not be funded, and
- b. Scientific and Technical Merit (50%) [proposals must address research questions, not merely “integration”]

#### **2. Other Evaluation Criteria**

Other evaluation criteria, of lesser importance than 1.a. and 1.b. (25% total), are:

- a. The qualifications of the Principal Investigator and other key research personnel (10%);
- b. The adequacy of current or planned facilities and equipment to accomplish the research objectives (5%);
- c. The impact of the research to enhance the US technical base by training students in science and engineering as well as strengthening the institution’s infrastructure, if necessary to meet NGA research objectives, by acquiring or refurbishing equipment key (5%);
- d. The impact of interactions with other organizations engaged in related research

and development, in particular industrial organizations, DOD laboratories and other organizations that perform research and development for defense applications (5%)

#### Cost

The evaluation of cost shall be based on cost realism as it relates to the Government's degree of confidence in the offeror's ability to perform the proposed work at the proposed cost (evaluated as pass/fail).

### **B. Review and Selection Process**

Proposals will be grouped together by specific research topic area. An expert technical team evaluates all proposals in the same group. The evaluation process consists of the following steps:

1. Proposals will be evaluated and scored against all seven criteria above and ranked in terms of preference for grant award by Government technical experts on the HBCU-MI Evaluation Team. Proposals not sufficiently meritorious for grant award will be noted as "Non-Selectable". Proposals deemed "Selectable" will be considered for funding as described below. However, it is anticipated that the number of "Selectable" proposals will exceed the available funding.
2. The entire HBCU-MI Evaluation Team will convene to consider the overall contribution of each proposal as reflected by the evaluation scores, the potential contribution to the advancement of the targeted technical topic(s), the amount of similar or related research currently underway on a given topic, and the amount of available funding. This step brings a cross-discipline balance to the selection process, reconciles recommendations about proposals spanning more than one technical area, and allows for strategic consideration of the diversity of proposals across the topic areas. While it is NGA's intent to distribute awards across the topic areas, the final outcome may not reflect this intent.
3. The HBCU-MI Evaluation Team will forward a list of proposals recommended for award ranked in order of preference, along with a description and results of the evaluation process, to the Director of the NGA InnoVision Basic and Applied Research Office for approval.
4. Once approved, this final award list will be forwarded to the Agreements Specialist for negotiation and award action. Proposals shall be good for 90 days to allow for additional awards if funds become available.

In summary, the HBCU-MI Evaluation Team will recommend the proposals that most effectively advance NGA's Academic Research Program and related thematic research programs for award in order of preference. The number of awards made is dependent upon the amount of available funding. If additional funding becomes available from within NGA, or from other U.S. Government agencies, NGA may choose to make additional awards under the terms of this BAA from the remaining most preferred

proposals. The sponsoring organization will be free to support any ‘selectable’ proposal(s) that addresses the research interests of that organization.

### **C. Anticipated Announcement and Award Dates**

The following table provides the significant dates referred to in the body of this announcement.

<u><b>Action</b></u>	<u><b>Responsibility</b></u>	<u><b>Due Date</b></u>
Broad Area Announcement	Government	24 March 2006
Proposal due	Principal Investigator	5 May 2006
Acknowledge receipt of proposals	Government	8 May 2006
Grant Award	Government	31 July 2006
Estimated Start date	Principal Investigator	1 August 2006

## **VI. AWARD ADMINISTRATION INFORMATION**

### **A. Award Notices**

Notification announcing whether or not the offeror’s proposal is being recommended for an award will be e-mailed directly to the principal investigator. Awards are expected to be in place by the proposed start date or the start date identified in paragraph V. C. , whichever is later.

### **B. Administration and National Policy Requirements**

Awards will be made at funding levels commensurate with the research and in response to Agency missions, but on average about \$70,000 per year per award. Further, awards will generally be made for two years (through incremental funding) with an option for one additional year. Negotiations may result in funding levels or periods of performance more or less than originally proposed.

### **C. Reporting**

An annual report is required after each year of the grant (except that the final report described below includes and replaces the final annual report), NLT 60 days from the anniversary date of the award. The report should address the accomplishments for the year and provide a listing of all publications and presentations arising from the research project. Copies of the annual report and referenced publications and presentations will be submitted in hard- and soft-copy to the NGA Academic Research Program Manager and the NGA Technical Advisor for the project.

A comprehensive final project report is required NLT than 90 days after the conclusion of

the grant. The report should address the accomplishments for the entire grant period and provide a listing of all publications and presentations arising from the research project. Copies of the final report and referenced publications and presentations will be submitted in hard- and soft-copy to the NGA Academic Research Program Manager and the NGA Technical Advisor for the project. Contact information will be supplied when the grant is awarded.

All NGA University Research Initiative grant principal investigators are required to attend and present at the annual NGA Academic Research Program Symposium held in the Washington, DC area in September each year.

## **VII. AGENCY CONTACTS**

### **A. Grants and Contracting Point of Contact**

Ms. Sharon McDowell at 703-735-3043. Email: [Sharon.M.McDowell@nga.mil](mailto:Sharon.M.McDowell@nga.mil)

### **B. Administrative Issues Point of Contact**

Dr. Scott Loomer at 703-735-3062. Email: [Scott.A.Loomer@nga.mil](mailto:Scott.A.Loomer@nga.mil)